



ICT ACCESSIBILITY IN CURRICULUM TRANSACTION FOR CHILDREN WITH SPECIFIC LEARNING DISABILITIES: TEACHER'S PERSPECTIVE

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ABSTRACT

Life in the 21st century is impeding the use of technology in all the aspects, offering exciting possibilities to create vast opportunities for student learning. Being digital native, digital inclusion and leadership role in ICT integration in education require strategic planning and management in the curriculum transaction process for children with specific learning disabilities. When principles of universal design are applied to curriculum development, curriculum adaptations, such as modifications to how the content is represented, how it is presented or how students engage through ICT with the content and barriers to learning are addressed. In the present study, purposive sampling method was employed to gather the information in which the sample size of 40 special educators/teacher's of special and inclusive schools of Delhi-NCR, using a structured self developed close-ended questionnaire. The information regarding teachers perspective towards ICT accessibility in curriculum transaction for children with specific learning disabilities was gathered and results were interpreted based on data analysis. The study reveals that majority of special educators and teacher's working special educators/teacher's showed positive inclination in their perspective and proved that Information and Communication Technology (ICT) accessibility in the learning environment is an effective tool in instrumenting curriculum transaction for children with specific learning disabilities. The study result will imply on the feasibility and the viability of ICT based curriculum transaction and recommend maximum service providers to initiate power to empower with Digital India, making technology central to enabling change in the landscape of special education.

KEY WORDS: Information and Communication Technology (ICT), Accessibility, Curriculum Transaction, Specific Learning Disabilities, Inclusive Education.

INTRODUCTION

With the rapid advancements in technologies, there is greater need for teachers to engage information and communication technology (hereinafter simply referred to as ICT) tools in conceptualizing, preparing, and delivering their lessons (Teo, 2014). It is well accepted that Information and Communication Technologies (ICT) have an immense potential to impact education – of children with specific learning disabilities, of special educators, of teacher educators and others, and provide newer and more effective ways of mitigating some of the challenges being faced by the educational system of our country. ICT's offer a great potential to support lifelong learning for all groups of students, including those who have special educational needs to expand access to education and therefore provides both learners and instructors with more educational affordances and possibilities. Based on ICT, learning and teaching no longer depend exclusively on printed materials (Advani, L. 2002).

The use of technology in education plays a particularly vital role by enabling flexible curriculum development and assisting students with disabilities to participate as equals in the learning experience. It also helps to prepare them for lifelong learning, recreation and work outside of school. ICT has blurred the boundaries between home, school, work and leisure spaces. ICT can be a change agent for transforming schools and the practices of teaching in their curriculum transaction and students learning outcome. To fully integrate ICT into all aspects of teaching and learning for children with multiple disabilities, teachers have to adopt different approaches that encourage student- focused learning and problem solving rather than content oriented approaches. The ICT tools, applications must be customised to meet the requirements of all disabled by overcoming the traditional barriers to learning and demonstrating abilities. ICT can aid in capacity building and can address individual and group difference. ICT can empower children with multiple disabilities and can indeed decrease the educational digital divide. The fundamental assumption made in this paper is that accessible ICT in curriculum transaction of children with specific learning disabilities can transform the plethora of education and full exploitation of ICT can bring new hope for PWDs for their teaching and learning for gainful, thus aiding inclusiveness.

REVIEW OF RELATED LITERATURE

This current review of literature gathers research findings together under the headings identified as ICT should be considered as a key tool for promoting equity in educational opportunities for children with specific learning disabilities; accessibility to appropriate ICTs should be considered an entitlement for children with special needs; Training of educational staff (special educators and teachers) in the use of general and specialist ICT must be considered a priority area towards curriculum transaction of children with specific learning disabilities; Monitoring the use of ICT in inclusion should be considered an area requiring attention at all levels of educational provision. The teacher's role in the integration of ICT in schools is obviously very important, and every educational reform effort should take into consideration teachers' knowledge, skills, beliefs, and attitudes (Cuban, 2000).

Loveless (2009) in her review of literature on pedagogy and ICT observes that things have moved on from Shulman's (1987) characteristics of teacher knowledge, and proposes that it now 'incorporate understandings of the construction of knowledge through distributed cognition, design, interaction, integration, context, complexity, dialogue, conversation, concepts and relationships' ICT as well as being a valuable tool for instruction (Kennisnet, 2011), is also ideal to support constructivist, knowledge construction, teaching and learning approaches that can help to deliver these new understandings of pedagogy for children with disabilities.

McMahon's study (2009) showed that there were statistically significant correlations between studying with ICT and the acquisition of critical thinking skills of children with disabilities. A longer exposure in the ICT environment can foster students' higher critical thinking skills. Thus, schools are strongly advised to integrate technology across all of the learning areas and among all learning levels. Where this is done, students are able to apply technology to the attainment of higher levels of cognition within specific learning contexts.

Lidström et al. (2012) divides student's use of information and communication technology (ICT) as an educational tool, an alternative tool for learning and a compensatory tool, i.e. as a computer-based assistive technology device (ATD). The computer is used as an educational tool i.e. by looking for information on the internet, making presentations and word processing. As an educational tool the computer is also used as an alternative tool for learning, with online textbooks, programs that practice certain skills etc. The use as an educational tool dominates the use of computers for students without disabilities.

For students with special educational needs the computer is also used as an educational tool, yet, the computer is also used as a compensatory tool to help the students compensate for abilities they lack. The ICT implementation in curriculum transaction could provide students with special educational needs opportunities to participate independently in the same educational activities as their peers by compensating for activity limitations and promote the use as an educational tool and/or an alternative tool for learning.

OBJECTIVES OF THE STUDY

The aim of this study was to describe teachers' perspective towards ICT accessibility in curriculum transaction for children with specific learning disabilities. The objectives defined are as follows:

- To study the accessibility and effectiveness of ICT amongst teacher's and special educators in special/inclusive school environment for curriculum transaction in special/inclusive school's of Delhi-NCR.
- To Compare the male and female special educators perspective towards ICT integration in school curriculum for children with specific learning disabilities.

HYPOTHESIS OF THE STUDY

H₀1 There is no significant difference in ICT accessibility skills of male and female special educators in curriculum transaction.

METHODOLOGY**Sample**

The population of the study consisted of special educators/teachers from special schools and inclusive schools of Delhi-NCR. For present study, a total number of 40 special educators were selected (20 Females Participants and 20 Male Participants, Total N=40), who are presently special educators in schools of Delhi-NCR and purposive sampling design was carried out. The researcher assumed that the responses from special educators were truthful and unbiased in their answers.

Tool Used

The tools used in the present study was a self developed close ended questionnaire by the researcher, comprising of 20 questions on different parameters with reference to the study conducted. The questionnaire consisted of six sections. The first section included demographic data related to special educators/teacher's.

The other five sections were used to obtain information related to (a) teachers' knowledge of computer software and teacher's participation in formal ICT based professional development training programs, (b) teachers' frequency of software use for curriculum transaction, (c) teachers' attitudes towards integrating ICT in teaching and learning process for children with specific learning disabilities, (d) teachers' accessibility in integrating ICT and frequency of using ICT for instructional purposes in the classroom, and (f) school climate and support for ICT implementation.

Procedure of Data Collection

The data was collected through a questionnaire included close ended questions on teacher's perspective towards ICT accessibility in curriculum transaction for children with specific learning disabilities. The questionnaire was given to 40 special educators/teachers. The answers were written by the special educators and then those questions were interpreted by calculating percentage of similar responses.

Statistical Technique Used

The investigator used the statistical techniques like Mean, Standard Deviation (SD) and t-test for interpretation and analysis of data.

DATA ANALYSIS, RESULT AND DISCUSSION

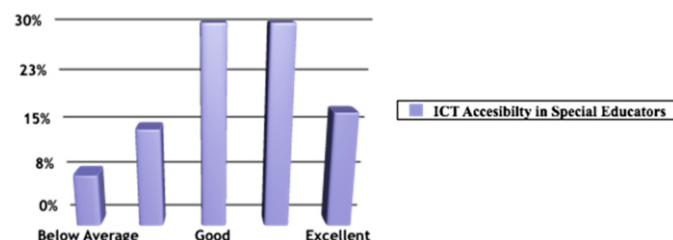
The objective wise analysis of the data was done. The first objective of the study is to study the accessibility and effectiveness of ICT amongst teacher's and special educators in special/inclusive school environment for curriculum transaction in special/inclusive school's of Delhi-NCR. For this the raw scores obtained from the analysis of the questionnaires filled by the participants are converted into the form of frequency and then into the form of percentage. As given in Table:1.

Table: 1

Responses of sample converted into frequency and percentage

Frequency of Score	No. of Participants	% of the participants
16-20	03	7.5 %
21-25	06	15 %
26-30	12	30 %
31-35	12	30 %
36-40	07	17.5 %

Further the participants are categorized on the basis of quality of ICT based learning skills. To assess the quality of ICT based learning skills for curriculum transaction among teachers, the frequency scores further categorized under several parameter i.e. below average, average, good, very good and excellent respectively shown by the means of graph (fig:1).

**Fig:1 Graphical representation of Frequency**

The second objective was to study the teacher's perspective towards ICT integration in school curriculum for children with specific learning disabilities. In order to achieve this objective the male and female special educators.. Based on the above stated objective, the null hypothesis formulated was "there is no significant difference in ICT accessibility skills of male and female special educators

in curriculum transaction".

The mean scores of male special educators were found 59.5 and female special educators were found 58.5 respectively. The Standard Deviations were found 5.024 and 5.618 for male and female special educators respectively. The calculated 't' value was 0.768 which shows there is no significant difference between the mean scores of male and female special educators (shown in Table: 2).

TABLE: 2

Means, Standard Deviations and 't' values of ICT accessibility skills of male and female special educators in curriculum transaction

Sr. No.	Sample	N	Mean	S.D.	't'	Df	Level of Significance
1	Male	20	59.5	5.024	0.768	38	Significant at both .05 and .01 level
2	Female	20	58.5	5.618			

***Table value (at the Df 38) = 2.03**

Hence, the formulated null hypothesis "There is no significant difference in ICT accessibility skills of male and female special educators in curriculum transaction" was accepted.

FURTHER SUGGESTIONS

- More broad and intensive study should be conducted using large sample.
- Randomized sampling technique may be used in the sample collection to eliminate the errors.
- The above mentioned suggestions obviously highlight that much more could be done on availability of time. However, this study has added a useful dimension in the field of ICT based learning. Also a few directions have been identified for further research in the hope that they will supplement, enrich and provide continuity in the present investigation.

CONCLUSION

Science and technology has always been instrumental in bringing efficiency and improvement in the processes and products of the human work. The world of education has influenced by the increased use of technology. It has provided valuable help in improving the task of the professional/teacher smoothing the process of teaching-learning and enriching the goals of management/education for children with and without disabilities. Hence, ICT plays a major role in managing/educating children with diverse needs and it becomes mandatory for every professional/ teacher to equip themselves with sufficient knowledge and necessary training in ICT for handling children with special needs. Educating all students by today's standards and for tomorrow's living most certainly includes the use of technology. Its relationship to providing essential supports for students with disabilities in areas of self-care, education, employment, recreation/leisure, and community living are readily accepted. Additionally, access to technology can provide meaningful learning experiences to develop problem solving and higher order thinking skills and to function in the world beyond the classroom. The appropriate and successful integration of technology into learning environments has the potential to benefit all students. As states and schools work to implement the requirements of educational reform required by the No Child Left Behind Act (2001) they must ensure that all students are included, in particular students with disabilities (Chadha, A. 2002). The view of technology as playing a "role" for the student with disabilities includes a focus on the teacher's integration of technology into the learning environment and on technology's impact on student outcomes and related benefits, disabilities and to ensure their access, participation, progress, and assessment within the general education curriculum, teacher technological competence should be viewed as a critical teacher skill for addressing and meeting educational needs of children specific learning disabilities in least restrictive environment. Special educators are more likely to use technology competently if it has been embedded in coursework and field experiences. Research suggests that assistive technologies are playing important and increasing role in the lives of children with disabilities.

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